

(43) Date of A Publication 26.04.1995

(22) Date of Filing **21.10.1993**

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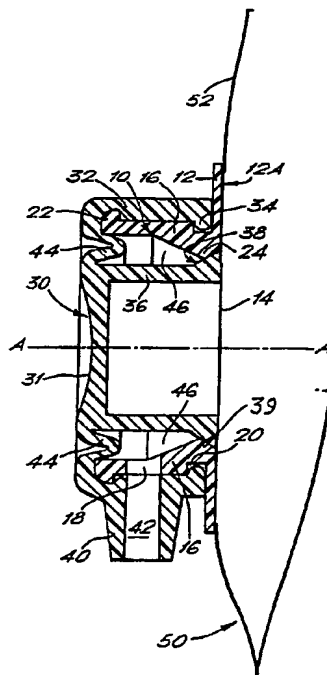
(51) INT CL⁶
A61F 5/44 , B67D 3/04

(52) UK CL (Edition N)
F2V VR2
B8T TEDV
U1S S1052 S1110

(56) Documents Cited
GB 2247882 A EP 0095861 A2

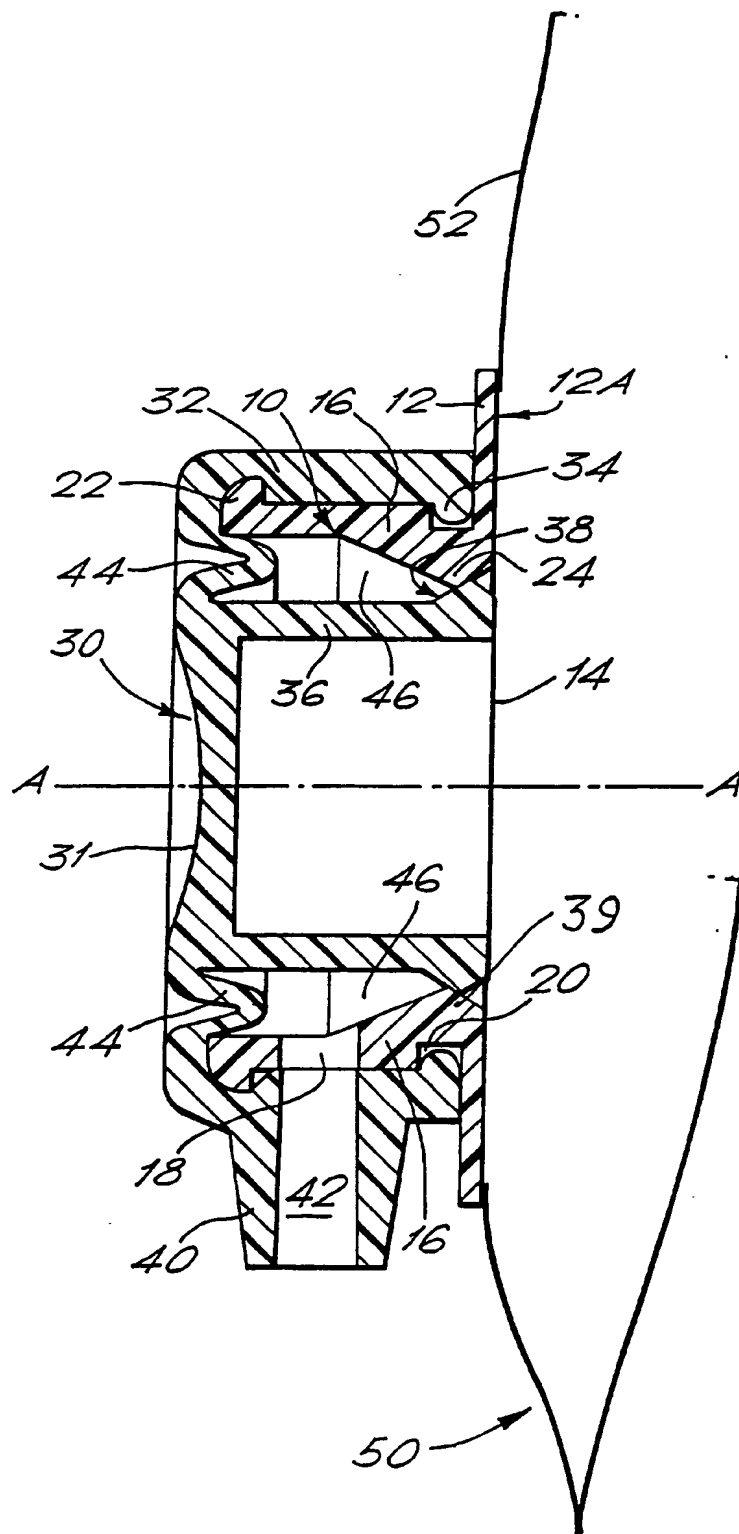
(58) Field of Search
UK CL (Edition L) B8T TEDV TWH TWQ , F2V VR2
VV9
INT CL⁵ A61F 5/44 , B67D 3/04 , F16K 21/00

(57) A plastics tap for controlling exit of liquid from a container such as a urine drainage bag, a urostomy pouch or a plastics bag containing wine in a wine box consists of two parts, the first part 10 having a flat flange 12 surrounding an opening and being connected to a hollow, generally tubular, preferably cylindrical, member 16. The member 16 has a radially inwardly projecting rim 39 surrounding the opening near to the flange, and the end of the member remote from the opening has a radially outwardly extending rim 22, there being a hole 18 through the tubular member 16 at one radial location. The second part 30 has a collar-like first portion 32 which snap-fits over the rim 22 and has a hole 42 in registry with the hole 18 in the tubular member 16, and a tubular second portion 36 which serves as the valve member of the tap. The portion 36 is located radially inwardly of the first portion 32 and the tubular member 16, and has one open end. A radially outer sealing surface 38 at the open end provides closure contact with the rim 39. The first and second parts 10 and 30 are integrally joined by a deformable plastics annulus 44 which is constructed to permit movement of the sealing surface 38 towards and away from the rim 39.



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A TAP

This invention relates to a plastics tap for controlling exit of liquid from a container such as a urine drainage bag, a urostomy pouch or a plastics bag such as is used to contain wine in a wine box. Various designs for such taps are known.

It would be desirable if there were available a tap, wholly made of plastics material which: (a) is easily attached to the bag even by high speed mass production methods; (b) has few moving parts and no loose parts; and (c) is readily and quickly assembled by simply pressing two plastics mouldings together.

According to the invention there is provided a tap which may be made wholly of injection-mouldable plastics material and which preferably consists of only two parts, the first part having a flat flange surrounding an opening and connected to a hollow, generally tubular, preferably cylindrical, member, the member having an inwardly projecting rim surrounding the opening near to the flange, and the end of the member remote from the opening having an outwardly extending rim, there being a hole through the tubular member at one radial location; in which the second part comprises a closure element having a first portion which is collar-like and fits over and makes a snap-fit engagement with the exterior of the tubular member, the first portion having a hole in registry with the hole in the tubular member, and a second portion which serves as the valve member of the tap and which is tubular, is located radially inwardly of the first portion, and has a radially outer sealing surface, one end of the element being open and having a peripheral surface arranged to make a closure contact with the said inwardly projecting rim, the first and second portions being joined by a deformable plastics annulus which is made in one piece with the first and second portions and which is constructed to be flexed so permitting the said outer sealing surface to make sealing engagement with the inwardly projecting rim when the second portion is in a first position and to permit liquid escape when it is in a second position.

The invention will be better understood from the following non-limiting description of an embodiment thereof, given with reference to the accompanying drawing which is a cross-sectional view taken in a diametrical plane through one example of a tap according to the invention.

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In a preferred form of the invention, the tap is a body of revolution about the line indicated A-A in the drawing. The illustrated tap comprises a first part 10 which has a flat flange 12 surrounding an opening 14. The flange 12 is made in one piece with a hollow generally tubular, preferable cylindrical, member 16. At one position on its periphery, the tubular member 16 has a hole 18 therein. There is recess 20 in a lower portion of the tubular member 16, this recess being annular, and an annular outwardly-extending rim 22 is located at an upper region of the first part 10.

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The second part of the tap is generally designated 30. This second part 30 functions as a closure element and has a first portion 32 which is collar-like in form and fits over and makes a snap-fit engagement with the outwardly extending rim 22 of the first part. The first portion also has an inwardly extending rim 34 which snaps into the recess 20 when the first and second parts are assembled. The second portion of the part 30 is tubular in shape and is located radially inwardly of the first portion 32. The second portion is indicated at 36. It has at its lower region an outwardly angled sealing surface 38 on the rim 39 which is annular in form and can make sealing engagement with an inwardly extending rim 24 which surrounds the opening 14. With the parts in the positions illustrated in the drawing, the sealing surface 38 is in contact with the rim 24 so closing off the opening 14. The first portion of the closure element 30 has a spigot 40 extending therefrom, there being a central hole 42 through this spigot which is in registry with the hole 18 in the first part 16. Part of a urostomy bag is illustrated at 50, one wall 52 thereof being secured in any suitable liquid-tight manner to the surface 12A of the flange 12. This securing could be achieved by

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plastics welding or by adhesive or other methods which will occur to one skilled in the art.

5 With the tap in the position shown in the drawing, liquid in the urostomy bag 50 cannot exit to the exterior. When the wearer of the urostomy bag desires to drain off its contents, he puts finger or thumb pressure onto the surface 31 of the closure element 30, causing a deformable plastics annulus to deform and flex and permit the tubular portion 36 to move to the right as seen in the drawing whereby the surface 38 comes away from the rim 24 leaving a space therebetween. This permits liquid to enter the annular space indicated 46 from which it can pass via the hole 18 and the spigot hole 42 to a suitable drainage tube.

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15 It will be seen that the invention has provided a tap of simple and effective design, which consists of only two parts, and which can be easily and inexpensively manufactured using mainly injection moulding techniques. It can be easily attached to a bag in a high speed bag-making process.

20 While the preferred embodiment has been described as a body of revolution and references were made to an annular sealing surface and a deformable annular of plastics material, it will be appreciated that the tap need not necessarily be circular. Instead, it could be oval in form or any other shape which permitted the necessary deformation (at 44) needed to permit the closure element 30 being pushed to the right as seen in the drawing in order to create a gap, through which liquid can flow, between the surface 38 and the rim 24.

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CLAIMS

1. A tap including two parts, the first part having a flat flange surrounding an opening and connected to a hollow, generally tubular, preferably cylindrical, member, the member having an inwardly projecting rim surrounding the opening near to the flange, and the end of the member remote from the opening having an outwardly extending rim, there being a hole through the tubular member at one radial location; in which the second part comprises a closure element having a first portion which is collar-like and fits over and makes a snap-fit engagement with the exterior of the tubular member, the first portion having a hole in registry with the hole in the tubular member, and a second portion which serves as the valve member of the tap and which is tubular, is located radially inwardly of the first portion, and has a radially outer sealing surface, one end of the element being open and having a peripheral surface arranged to make a closure contact with the said inwardly projecting rim, the first and second portions being joined by a deformable plastics annulus which is made in one piece with the first and second portions and which is constructed to be flexed so permitting the said outer sealing surface to make sealing engagement with the inwardly projecting rim when the second portion is in a first position and to permit liquid escape when it is in a second position.
2. A tap according to claim 1 which consists only of the said first and second parts.
3. A tap according to claim 1 or 2 which is made wholly of injection-mouldable plastics material.
4. A tap according to claim 1, 2 or 3 in combination with a urine drainage pouch or a urostomy pouch and having the external surface of the said flat flange directly secured to a wall of said urostomy or urine drainage pouch.

5. A tab substantially as herein described with reference to and as illustrated in the accompanying drawings.

5 6. Any novel combination or sub-combination of features disclosed and/or illustrated herein.

Patents Act 1977**Examiner's report to the Comptroller under Section 17
(The Search report)**Application number
GB 9321691.9**Relevant Technical Fields**

(i) UK Cl (Ed.L) F2V (VR2, VV9) B8T (TEDV, TWH, TWQ)

(ii) Int Cl (Ed.5) F16K (21/00) A61F (5/44) B67D (3/04)

Search Examiner
Pam HyettDate of completion of Search
13 DECEMBER 93**Databases (see below)**

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Documents considered relevant
following a search in respect of
Claims :-
1-5**Categories of documents**

- X: Document indicating lack of novelty or of inventive step. P: Document published on or after the declared priority date but before the filing date of the present application.
- Y: Document indicating lack of inventive step if combined with one or more other documents of the same category. E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.
- A: Document indicating technological background and/or state of the art. &: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages	Relevant to claim(s)
A	GB 2247882 A (CHUNG-KAI CHO) see particularly Figures 4 and 5	
A	EP 0095861 A2 (LIQUI-BOX) see particularly Figures 5-9	

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).